A5200-3

Insurance Losses
Personal Injury Protection Coverages

PASSENGER CARS, VANS, PICKUPS, AND UTILITY VEHICLES

1979 - 1981 MODELS

Research Report HLDI I 81-1
September 1982

Highway Loss Data Institute
Watergate Six Hundred
Washington, D.C. 20037

Copyright © 1982 by the Highway Loss Data Institute

(Permission to quote from or to reproduce material from this publication is granted when due acknowledgement is made.)

ISSN 0734-9017

Highway Loss Data Institute

The membership of the Highway Loss Data Institute Board of Directors and the Technical Resource Committee represents insurance companies that are supplying data to HLDI. Financial support for HLDI is provided through the Insurance Institute for Highway Safety, which in turn is supported by most automobile insurers either directly or through their trade associations.

BOARD OF DIRECTORS

M. Albaum, Chairman
Prudential Property and Casualty Insurance Company

D. H. Brown
Kemper Insurance and Financial Companies

C. A. Bryan
United Services Automobile Association

H. Cameron
The Travelers Insurance Companies

G. L. Countryman
Liberty Mutual Insurance Company

D. Fergusson
Nationwide Mutual Insurance Company

D. Messmer
Government Employees Insurance Company

P. Simoneau
Aetna Life and Casualty

W. W. Sorenson
State Farm Mutual Automobile Insurance Company

J. S. Trees
Allstate Insurance Company

W. Haddon, Jr., *ex officio*
Highway Loss Data Institute

TECHNICAL RESOURCE COMMITTEE

J. S. Trees, Chairman
Allstate Insurance Company

M. Albaum
Prudential Property and Casualty Insurance Company

D. H. Brown
Kemper Insurance and Financial Companies

C. A. Bryan
United Services Automobile Association

R. O. Elder
Highway Loss Data Institute

D. Fergusson
Nationwide Mutual Insurance Company

G. C. Klingman
The Travelers Insurance Companies

A. Ledbetter
Government Employees Insurance Company

B. O'Neill
Highway Loss Data Institute

R. Shrum
Liberty Mutual Insurance Company

P. Simoneau
Aetna Life and Casualty

W. W. Sorenson
State Farm Mutual Automobile Insurance Company

Summary

This Highway Loss Data Institute (HLDI) report presents the frequency of claims for injuries to occupants of 1979, 1980, and 1981 model year passenger cars, vans, pickup trucks, and utility vehicles. Claim frequency results are shown separately for all medical claims and for those claims for which the medical losses exceeded $250, $500, and $1,000.

Principal Findings

Passenger Cars

- Fifteen cars had at least one claim frequency result that was more than 30 percent better than the result for all cars combined (Table 2, page 5). This best group is dominated by large station wagons and regular four-door models. No regular two-door models were among the cars with the best injury experience. All 15 of these cars with the best injury experience were manufactured in the United States, 12 of them by General Motors.

- Fourteen cars had at least one claim frequency result that was more than 30 percent worse than the result for all cars combined (Table 3, page 5). This group of cars is dominated by small two-door models; 12 of the 14 cars with the worst injury experience are imported models, all from Japan.

- Among the cars with the best injury experience, the Oldsmobile Toronado had the lowest overall claim frequency (41 percent below average). The four-door Buick LeSabre had the lowest frequency of claims exceeding $250 (37 percent below average) and the Buick Century station wagon had the lowest frequency of claims greater than $500 (39 below average). The Chevrolet Caprice station wagon had the lowest frequency of claims greater than $1,000 (37 percent below average).

- Among the cars with the worst injury loss experience, the Dodge Challenger (manufactured in Japan) had the highest overall injury claim frequency (60 percent above average). The Datsun 200 SX had the highest frequency of claims exceeding $1,000 (56 percent above average).

- Station wagons had the lowest overall injury claim frequencies in each size class and four-door models consistently had lower claim frequencies than two-door models of the same size. However, even among cars of the same body style and size group, there were substantial variations in injury claim frequencies.

- In general, as car size decreased the injury claim frequencies increased.

Vans, Pickups, Utility Vehicles

- Large and intermediate utility vehicles and standard-sized pickups had the best injury experience, ranging from about one-half to about two-thirds the average for passenger cars (Figure 2, page 14).

- Small utility vehicles, a group primarily composed of the Jeep CJ-5 and CJ-7 models, had the worst injury experience. The frequency of claims with medical payments greater than $1,000 for this group of vehicles was 65 percent greater than the average for passenger cars.

- The GMC C2500/K2500 (3/4 T) and Chevrolet C20/K20 (3/4 T), both standard-sized pickups, Chevrolet G20 Sportvan (3/4 T), and Chevrolet C10/K10 Suburban (1/2 T) all had overall injury claim frequencies approximately one-half the all-passenger-car result.

- The Subaru Brat had the worst injury experience of all pickups reported. The Jeep CJ-5, a small utility vehicle, had the highest claim frequency in each of the claim size categories in which it was reported. Its frequencies of claims exceeding $250 and $500 were higher than those for any other vehicle in this report.

- As with passenger cars, in general, the larger the vehicles considered, the lower were their injury claim frequencies. Most of the standard-sized pickups had lower claim frequencies than the small pickups and, in general, for vans and pickups, the 3/4 ton models had lower claim frequencies than their 1/2 ton counterparts.

Table of Contents

Page

Summary v

List of Figures vii

List of Tables viii

Introduction 1

Results and Discussion 3

Passenger Cars 3

Vans, Pickups, and Utility Vehicles 13

Appendix A - Specifications of Injury Coverages 17

Appendix B - Method of Data Analysis 18

Appendix C - Definitions 21

Appendix D - Vehicle Series Designation 23

Part A: Passenger Cars 23

Part B: Vans, Pickups, and Utility Vehicles 27

List of Publications 28

List of Figures

Page

Figure 1 Personal Injury Protection Coverages, Relative Claim Frequencies, 1979 - 1981 Model Year Passenger Cars 12

Figure 2 Personal Injury Protection Coverages, Relative Claim Frequencies, 1979 - 1981 Model Year Vans, Pickups, and Utility Vehicles 14

List of Tables

		Page
Table 1	Personal Injury Protection Coverages, Claim Frequencies by Model Year and Size of Claim	3
Table 2	1979 - 1981 Passenger Cars With The Best Injury Loss Experience, Relative Injury Claim Frequencies - Personal Injury Protection Coverages	5
Table 3	1979 - 1981 Passenger Cars With The Worst Injury Loss Experience, Relative Injury Claim Frequencies - Personal Injury Protection Coverages	5
Table 4	Relative Claim Frequency By Size of Claim, Personal Injury Protection Coverages, 1979 - 1981 Model Year Passenger Cars	6
Table 5	Relative Claim Frequency By Size of Claim, Personal Injury Protection Coverages, 1979 - 1981 Model Year Vans, Pickups, and Utility Vehicles	15

Introduction

The Highway Loss Data Institute (HLDI) is a non-profit, public service organization that gathers, processes, and publishes insurance data concerned with human and economic losses associated with motor vehicle use, especially with the ways such losses vary among different kinds of vehicles.

This report compares the frequencies of claims for injuries to occupants of 1979 through 1981 model year passenger cars, vans, pickup trucks, and utility vehicles. In addition to the frequencies of all claims, separate claim frequencies are given for claims for which the injury payments exceeded certain dollar amounts - $250, $500, and $1,000. The results are given for individual vehicle series as well as for various vehicle groupings based on body style and vehicle size. Vehicle size classes are determined by wheelbase and in some instances vehicles that are otherwise similar may be classified separately because of small wheelbase differences.

In calculating injury claim frequencies, all injuries in a crash-involved car resulting in claims for medical expenses made under personal injury protection insurance coverages are counted as a single claim. A description of these first-party coverages, which principally insure against medical losses to occupants of the insured cars themselves, is given in Appendix A. The data analysis methods used in the preparation of this report are detailed in Appendix B. Definitions are given in Appendix C and Appendix D contains a complete list of the vehicles which appear in this report. The data used were supplied by ten insurers: Aetna, Allstate, GEICO, Kemper, Liberty Mutual, Nationwide, Prudential, State Farm, Travelers, and USAA.

This report is based on injury coverages and injury claims involving 1979 through 1981 models in the period from their introductions through December 1981. It does not include the results for vehicles discontinued prior to the 1981 model year.

It is intended that the dissemination of this and other HLDI reports will contribute to research into ways for reducing vehicle-related damage to people and property, and provide the public with information relating to the differences in the crash damage produced by different kinds of vehicles.

Results and Discussion

This report presents injury claim frequency results for 1979-1981 model year vehicles. Results are presented in two sections, the first summarizing the results for passenger cars and the second for vans, pickup trucks, and utility vehicles. The frequency of all claims (paid and pending) and the frequencies of claims whose medical payments exceed $250, $500, and $1,000 are shown for those vehicles with sufficient exposure*. The results based on the larger medical claims indicate the frequency of occurrence of injuries of increasing severity.

Each claim frequency result is presented in relative terms, with 100 representing the claim frequency for *all passenger cars* combined in each claim size category.

The relative injury experience of particular vehicles does not change substantially from model year to model year providing that the basic design of the vehicle remains essentially unchanged. For this reason and because substantial amounts of exposure are needed to produce reliable injury claim frequency results, the data for model years 1979 through 1981 were combined for those vehicles whose basic designs remained unchanged. Vehicle series which were discontinued or redesigned prior to 1981 (such as the Dodge Aspen and the Pontiac Sunbird, both produced through model year 1980) are not included in the report. New vehicle introductions (such as the GM "X-Body" cars in model year 1980 and the Ford Escort in 1981) are included. For each vehicle series and each vehicle subgroup, a separate relative claim frequency was calculated for each model year. The aggregated result was then obtained by weighting these relative claim frequencies by the applicable exposure for each model year. For additional explanation of this procedure, see Appendix B.

Passenger Cars

The total exposure amassed by passenger cars of the three model years included in this report amounted to over 5.6 million vehicle years. Table 1 presents the claim frequencies by size of claim for each model year. It shows that the frequencies of claims decreased rapidly with increasing medical costs. The frequency of claims exceeding $250 was less than half of the overall claim frequency, the frequency of claims exceeding $500 was less than one-third the overall frequency, and the frequency of claims greater that $1,000 was less than one-fifth the overall frequency.

TABLE 1

Personal Injury Protection Coverages
Claim Frequencies by Model Year and Size of Claim

Model Year	Total Exposure	Claim Frequencies Per 1,000 Insured Vehicle Years			
		All Claims	$250	$500	$1,000
1981	699,415	19.1	7.9	5.3	3.3
1980	1,779,106	18.3	7.8	5.4	3.3
1979	3,142,748	17.2	7.4	5.1	3.2

* The exposure thresholds for reporting results were 5,000 insured vehicle years for the "all" results, 10,000 years for the greater than $250 results, 15,000 years for the greater than $500 results, and 25,000 years for the greater than $1,000 results. The results shown in this report were standardized to remove the effects due to differences in the mix of operator age group among different vehicles. Standardizing for this non-vehicle factor ensures that its mix is the same for each result. It should be noted that other non-vehicle factors could vary among different vehicles and that any effects resulting from such factors have not necessarily been eliminated from the results presented in this report. The standardization procedure is described in detail in Appendix B.

The total dollars paid out, however, were dramatically influenced by the more expensive claims. For example, claims exceeding $250, while representing less than half of all claims, accounted for 94 percent of the total dollars for medical payments. Claims exceeding $500 accounted for nearly 90 percent of the total dollars and claims over $1,000 accounted for nearly 80 percent of the total dollars.

Table 2 summarizes the individual 1979 through 1981 models with the best injury loss experience. Any individual series whose claim frequency was more than 30 percent better (a relative claim frequency of less than 70) than the all-car result for any of the claim size categories is listed. The cars are ranked in increasing order of their overall relative claim frequency. Each individual relative claim frequency result which was less than 70 is shown in bold print.

There are 15 vehicle series listed in Table 2; these are the cars with at least one claim frequency result that was more than 30 percent better than average. These cars had the best injury loss experience among the 128 vehicle series from model year 1979 through 1981 with sufficient exposure to be summarized in Table 4. There are eight regular four-door models, six station wagons, and one specialty model among the cars with the best injury loss experience, most of them large cars. There were no regular two-door models on the list. All of the 15 models were manufactured in the United States, 12 of them by General Motors.

The Oldsmobile Toronado, an intermediate-sized specialty model, had the lowest overall relative claim frequency (59). The four-door Buick LeSabre had the lowest relative frequency (63) of claims exceeding $250 and the Buick Century station wagon had the lowest relative claim frequency (61) of claims greater than $500. Of the cars with sufficient exposure to report a result for claims exceeding $1,000, the Chevrolet Caprice station wagon had the lowest relative claim frequency (63).

It should be noted that there are other vehicle series which had lower overall claim frequencies than some of the cars listed in Table 2, but did not have relative claim frequencies of less than 70 for any of the claim size categories. The results for these cars are shown in Table 4.

Table 3 summarizes in similar fashion the 1979 through 1981 models with the worst injury loss experience. Any individual series whose claim frequency was more than 30 percent worse (a relative claim frequency of more than 130) than the all-car result for any of the claim size categories is listed. Cars are listed in decreasing order of their overall relative claim frequency and results greater than 130 are shown in bold print.

There are 14 cars listed in Table 3, most of them small, regular two-door models. There were no station wagons or regular four-door models on the list of cars with the worst injury loss experience. The first six and a total of 12 of the 14 were imported models, all from Japan.

The Dodge Challenger had the highest overall relative claim frequency (160), or sixty percent higher than the result for all cars combined. Of the cars with sufficient exposure to report a result for claims exceeding $1,000, the Datsun 200 SX had the highest relative claim frequency (156).

Table 4 presents relative injury claim frequency results for all of the 1979 through 1981 models with sufficient exposure. Results are shown for individual series and for each body style-car size group. The individual series results in Table 4 are listed within each group in ascending sequence of their overall relative claim frequencies.

The results in Table 4 indicate that, in general, cars with smaller wheelbases had higher injury losses than cars with larger wheelbases. Table 4 also shows that there were large differences in the loss experience of cars in the same body style and car size categories. For example, the overall relative claim frequencies for small compact four-door models ranged from a low of 80 for the Chevrolet Citation to a high of 130 for the Toyota Cressida, a difference of more than 60 percent.

Figure 1 (page 12) shows the overall relative claim frequencies by body style and car size group. There is a general pattern of improving loss experience in each body style group associated with increasing car size. Station wagons had the lowest overall injury claim frequencies in each size class and four-door models consistently had lower claim frequencies than two-door models of the same size. *(text continues on page 13)*

TABLE 2

1979-1981 Passenger Cars With the Best Injury Loss Experience
Relative Injury Claim Frequencies - Personal Injury Protection Coverages

Make and Series	Exposure	Relative Claim Frequencies By Size of Claim			
		All	>$250	>$500	>$1,000
Oldsmobile Toronado	26,559	59	68	68	67
Mercury Marquis-S.W.	5,864	61			
Oldsmobile Custom Cruiser	16,302	62	70		
Pontiac Catalina-4 Dr.	10,680	64			
Oldsmobile Ninety-Eight-4 Dr.	45,639	65	76	74	78
Oldsmobile Cutlass-S.W.	32,004	66	67	67	69
Chevrolet Caprice-S.W.	29,903	67	65	68	63
Buick LeSabre-4 Dr.	51,243	69	63	66	64
Buick LeSabre-S.W.	9,222	69			
Mercury Marquis-4 Dr.	32,453	71	69	66	68
Oldsmobile Cutlass-4 Dr.	65,256	73	66	66	70
Chrysler Newport-4 Dr.	20,338	73	75	68	
Chevrolet Citation-4 Dr.**	87,134	80	75	69	65
Buick Century-S. W.	19,878	82	66	61	
Oldsmobile Omega-4 Dr.**	21,911	84	74	67	

**1980 and 1981 models only

TABLE 3

1979-1981 Passenger Cars With the Worst Injury Loss Experience
Relative Injury Claim Frequencies - Personal Injury Protection Coverages

Make and Series	Exposure	Relative Claim Frequencies By Size of Claim			
		All	>$250	>$500	>$1,000
Dodge Challenger	6,031	160			
Plymouth Sapporo	5,850	148			
Datsun 200 SX**	29,153	141	136	140	156
Toyota Corolla-2 Dr.*	15,558	138	139	133	
Datsun 210-2 Dr.	47,399	136	137	145	145
Toyota Corolla Tercel-2 Dr.**	35,861	134	128	126	134
Dodge Omni-2 Dr.	41,864	134	123	122	120
Plymouth Champ	27,226	132	132	123	125
Honda Civic-2 Dr.	95,422	131	133	133	131
Toyota Celica Supra	13,229	129	135		
Dodge Colt	29,944	124	127	127	133
Honda Prelude	30,341	122	125	135	137
Buick Electra-2 Dr.	16,288	121	135	145	
Mazda RX-7	39,108	121	131	130	134

*1981 models only
**1980 and 1981 models only

TABLE 4
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGE 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
79-81	ALL	ALL	5630212	100	100	100	100
		TWO-DOOR MODELS					
79-81	SMALL SUBCOMPACT		634890	122	120	118	118
81	VOLKSWAGEN	RABBIT	6379	98			
79-81	HONDA	ACCORD	84175	102	99	98	97
81	MERCURY	LYNX	5745	106			
79-81	VOLKSWAGEN	SCIROCCO	20767	108	112	111	
79-81	AMERICAN	SPIRIT	46661	113	108	102	104
81	FORD	ESCORT	17076	114	107	102	
79-81	DATSUN	310	57549	124	121	117	116
79-81	DODGE	COLT	29944	124	127	127	133
79-81	CHEVROLET	CHEVETTE	138140	124	118	113	110
79-81	HONDA	CIVIC	95422	131	133	133	131
79-81	PLYMOUTH	CHAMP	27226	132	132	123	125
79-81	DATSUN	210	47399	136	137	145	145
81	TOYOTA	COROLLA	15558	138	139	133	
80-81	DATSUN	200SX	29153	141	136	140	156
79-81	SUBCOMPACT		576368	126	125	125	122
81	PLYMOUTH	RELIANT	6343	105			
81	DODGE	ARIES	5123	109			
79-81	MERCURY	CAPRI	63622	121	115	109	105
79-81	TOYOTA	CELICA	120057	123	127	130	124
79-81	FORD	MUSTANG	231658	125	127	129	125
79-81	PLYMOUTH	HORIZON	52152	127	118	114	113
80-81	TOYOTA	COROLLA TERCEL	35861	134	128	126	134
79-81	DODGE	OMNI	41864	134	123	122	120
79-81	PLYMOUTH	SAPPORO	5850	148			
79-81	DODGE	CHALLENGER	6031	160			
79-81	SMALL COMPACT		244046	105	103	103	103
80-81	BUICK	SKYLARK	26474	90	81	76	77
80-81	OLDSMOBILE	OMEGA	12543	91	82		
80-81	CHEVROLET	CITATION	56341	96	93	91	87
80-81	PONTIAC	PHOENIX	15342	105	83	**	
79-81	FORD	FAIRMONT	100117	109	111	115	120
79-81	MERCURY	ZEPHYR	29498	130	128	127	113

(See footnotes on page 11.)

TABLE 4
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGES 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
		TWO-DOOR MODELS (CONTD)					
79-81	COMPACT		662977	96	98	98	98
79-81	CHEVROLET	MALIBU	80875	91	91	93	85
79-81	OLDSMOBILE	CUTLASS	315630	93	95	95	95
80-81	CHRYSLER	LE BARON	7277	93			
79-81	PONTIAC	LEMANS	16651	95	95	100	
79-81	AMERICAN	CONCORD	28016	101	97	93	94
79-81	BUICK	REGAL	207225	101	105	104	106
79-81	INTERMEDIATE		232739	88	92	97	98
79-81	PONTIAC	BONNEVILLE	31399	82	81	79	79
79-81	OLDSMOBILE	NINETY EIGHT	15223	83	113	122	
79-81	BUICK	LESABRE	28532	84	85	94	92
79-81	FORD	LTD	38570	85	89	93	97
79-81	OLDSMOBILE	DELTA 88	44795	87	91	96	102
79-81	CHEVROLET	IMPALA	13414	89	101		
79-81	CHEVROLET	CAPRICE	27130	90	93	99	97
79-81	MERCURY	MARQUIS	11647	98	**		
79-81	BUICK	ELECTRA	16288	121	135	145	
		FOUR-DOOR MODELS					
79-81	SMALL SUBCOMPACT		78615	98	102	100	87
79-81	HONDA	ACCORD	51072	93	93	90	79
81	VOLKSWAGEN	RABBIT	8685	97			
81	TOYOTA	COROLLA	5389	118			
79-81	SUBCOMPACT		368237	108	103	100	100
81	DODGE	ARIES	5922	86			
81	PLYMOUTH	RELIANT	7996	94			
79-81	DODGE	OMNI	63467	107	100	97	96
79-81	PLYMOUTH	HORIZON	83544	107	104	103	104
79-81	CHEVROLET	CHEVETTE	190191	112	105	102	101

(See footnotes on page 11.)

TABLE 4
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGES 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
		FOUR-DOOR MODELS (CONTD)					
79-81	SMALL COMPACT		289539	92	87	85	84
80-81	CHEVROLET	CITATION	87134	80	75	69	65
80-81	OLDSMOBILE	OMEGA	21911	84	74	67	
80-81	BUICK	SKYLARK	43873	84	81	81	97
80-81	PONTIAC	PHOENIX	24512	91	85	88	
79-81	FORD	FAIRMONT	72776	104	99	100	96
79-81	MERCURY	ZEPHYR	21419	117	119	118	
79-81	TOYOTA	CRESSIDA*	5388	130			
79-81	COMPACT		262739	83	78	76	78
79-81	OLDSMOBILE	CUTLASS	65256	73	66	66	70
79-81	BUICK	CENTURY	44502	77	74	76	75
79-81	PONTIAC	LEMANS	32406	82	76	82	90
79-81	CHEVROLET	MALIBU	95752	89	85	82	85
79-81	AMERICAN	CONCORD	20090	107	101	90	
79-81	INTERMEDIATE		621365	76	76	76	77
79-81	PONTIAC	CATALINA	10680	64	**		
79-81	OLDSMOBILE	NINETY EIGHT	45639	65	76	74	78
79-81	BUICK	LESABRE	51243	69	63	66	64
79-81	MERCURY	MARQUIS	32453	71	69	66	68
79-81	OLDSMOBILE	DELTA 88	88344	72	73	71	73
79-81	CHRYSLER	NEWPORT	20338	73	75	68	
79-81	BUICK	ELECTRA	32304	75	75	79	**
79-81	PONTIAC	BONNEVILLE	52644	78	77	78	83
79-81	CHEVROLET	IMPALA	56521	78	78	76	86
79-81	CHEVROLET	CAPRICE	92938	80	80	80	81
79-81	FORD	LTD	60067	82	84	84	91
79-81	CHRYSLER	NEW YORKER	17113	88	105	**	
79-81	DODGE	ST. REGIS	11520	90	86		
79-81	CHRYSLER	LE BARON	28101	93	86	81	88
79-81	DODGE	DIPLOMAT	10703	95	91		

(See footnotes on page 11.)

TABLE 4
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGES 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
		STATION WAGONS					
79-81	SMALL SUBCOMPACT		90682	94	92	95	88
81	FORD	ESCORT	11120	77	72		
79-81	DATSUN	510	14392	94	94		
79-81	DATSUN	210	42240	97	92	90	82
79-81	MAZDA	GLC	12972	104	110		
79-81	SUBCOMPACT		27166	87	85	86	91
79-81	VOLKSWAGEN	DASHER	9913	88			
81	PLYMOUTH	RELIANT	5360	94			
79-81	SMALL COMPACT		81725	90	81	80	75
79-81	MERCURY	ZEPHYR	13903	90	83		
79-81	FORD	FAIRMONT	63977	91	81	82	74
79-81	COMPACT		178762	80	75	75	77
79-81	OLDSMOBILE	CUTLASS	32004	66	67	67	69
80-81	AMERICAN	EAGLE	7356	73			
79-81	PONTIAC	LEMANS	28757	78	71	73	71
79-81	BUICK	CENTURY	19878	82	66	61	
79-81	CHEVROLET	MALIBU	71575	84	78	77	77
79-81	AMERICAN	CONCORD	15151	104	109	102	
79-81	INTERMEDIATE		145036	73	68	67	69
79-81	MERCURY	MARQUIS	5864	61			
79-81	OLDSMOBILE	CUSTOM CRUISER	16302	62	70	**	
79-81	CHEVROLET	CAPRICE	29903	67	65	68	63
79-81	BUICK	LESABRE	9222	69			
79-81	PONTIAC	CATALINA	6067	74			
79-81	PONTIAC	BONNEVILLE	8316	74			
79-81	FORD	LTD	24358	81	83	80	
79-81	CHEVROLET	IMPALA	25665	83	80	81	**
79-81	CHRYSLER	LE BARON	10457	87	**		

(See footnotes on page 11.)

TABLE 4
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGES 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
		SPORTS & SPECIALTY MODELS					
79-81	SMALL SUBCOMPACT		114637	117	127	132	135
79-81	DATSUN	280ZX	28524	111	125	125	128
79-81	MAZDA	RX7	39108	121	131	130	134
79-81	HONDA	PRELUDE	30341	122	125	135	137
79-81	FIAT	SPIDER 2000	5048	123			
79-81	SUBCOMPACT		47744	93	101	105	117
79-81	CHEVROLET	CORVETTE	34171	90	100	106	116
79-81	DATSUN	280ZX 2+2	10910	104	105		
79-81	SMALL COMPACT		33343	101	109	113	110
79-81	AUDI	5000	19060	81	88	98	
79-81	TOYOTA	CELICA SUPRA	13229	129	135		
79-81	COMPACT		635295	107	112	114	114
79-81	PONTIAC	GRAND PRIX	146514	101	103	104	102
80-81	FORD	THUNDERBIRD	39019	104	120	121	117
79-81	CHEVROLET	MONTE CARLO	185613	107	112	114	113
80-81	MERCURY	COUGAR XR-7	14534	110	124		
79-81	PONTIAC	FIREBIRD	103343	111	115	118	124
79-81	CHEVROLET	CAMARO	144025	115	116	122	122
79-81	INTERMEDIATE		158536	77	87	88	92
79-81	OLDSMOBILE	TORONADO	26559	59	68	68	67
80-81	LINCOLN	MARK VI 2D	5087	71			
79-81	CADILLAC	SEVILLE	22398	72	74	76	
79-81	BUICK	RIVIERA	32985	74	86	88	98
79-81	CADILLAC	ELDORADO	37435	86	98	108	117
80-81	LINCOLN	TOWN CAR 4D	5882	90			
80-81	CHRYSLER	CORDOBA	13185	92	101		
80-81	DODGE	MIRADA	7845	103			

(See footnotes on page 11.)

TABLE 4
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGES 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
		SPORTS & SPECIALTY MODELS (CONTD)					
79-81	FULL-SIZE		145769	82	96	103	107
79-81	CADILLAC	DE VILLE 4D	51250	72	86	96	100
79-81	CADILLAC	BROUGHAM 4D	18706	80	91	**	
79-81	CADILLAC	DE VILLE 2D	74582	89	106	112	117

FOOTNOTES FOR TABLE 4

RESULTS ARE STANDARDIZED TO THE DISTRIBUTION:

YOUTHFUL OPERATOR	NO YOUTHFUL OPERATOR
15%	85%

MINIMUM EXPOSURE REQUIREMENTS FOR REPORTING:

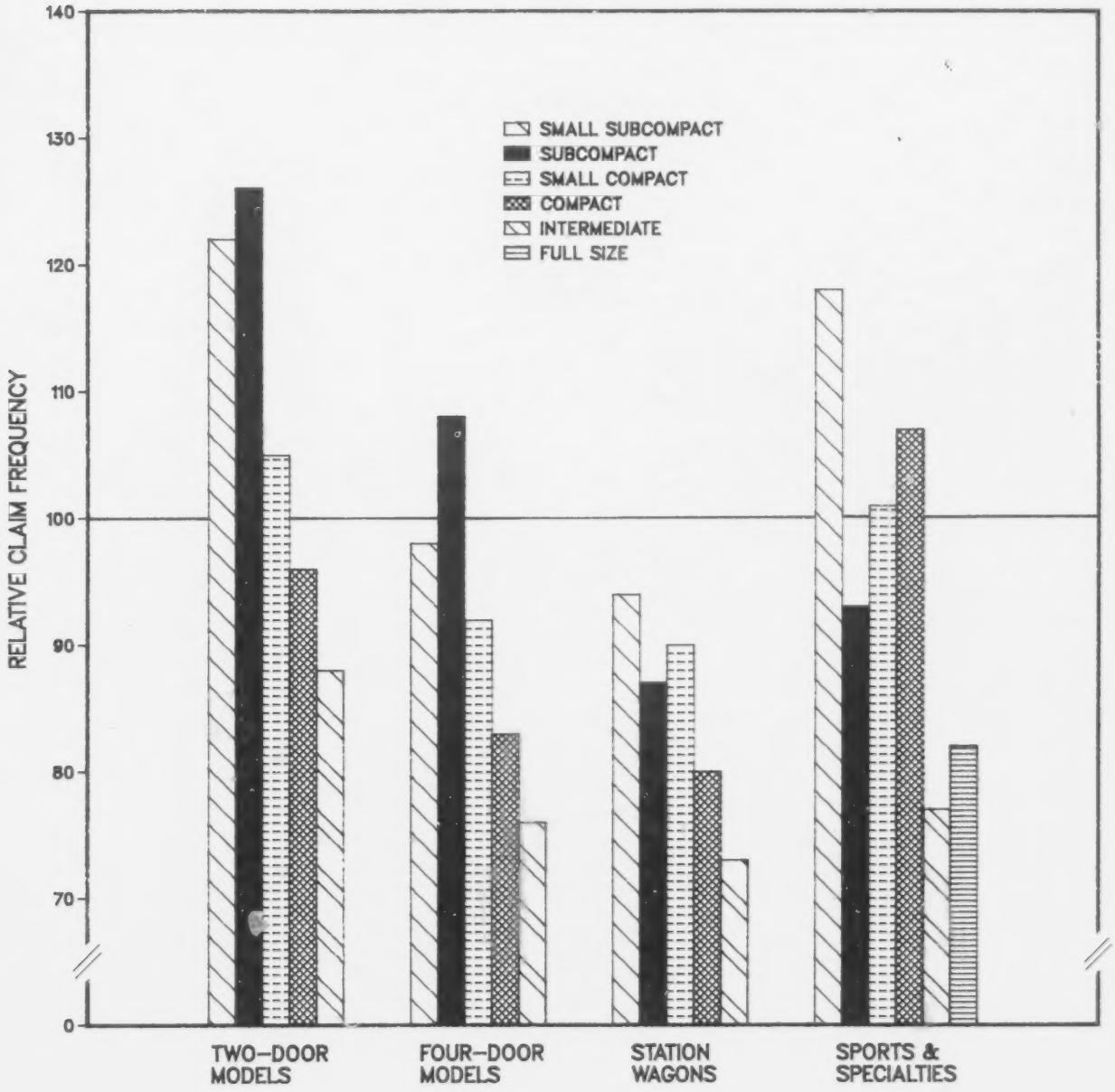
ALL CLAIMS	-	5,000 VEHICLE YEARS
CLAIMS > $250	-	10,000 VEHICLE YEARS
CLAIMS > $500	-	15,000 VEHICLE YEARS
CLAIMS >$1000	-	25,000 VEHICLE YEARS

* THE 1979-80 MODELS OF THIS CAR WERE EQUIPPED WITH MANUAL SEAT BELTS. THE 1981 MODEL WITH AUTOMATIC BELTS. MOST OF THE EXPOSURE FROM WHICH THIS OVERALL RESULT WAS DERIVED WAS FROM THE TWO EARLIER MODEL YEARS.

** INSUFFICIENT DATA TO COMPUTE STANDARDIZED RESULT.

FIGURE 1

Personal Injury Protection Coverages
Relative Claim Frequencies
1979-1981 Model Year Passenger Cars



Vans, Pickups, and Utility Vehicles

This section presents injury claim frequency results for 1979-1981 model year vans, pickups, and utility vehicles. The results for pickups are divided into two groups, small pickups and standard pickups. Small pickups are defined as those whose curb weight is less than 3,000 pounds. The utility vehicle results are divided into three groups, based on wheelbase; small utility vehicles are defined as those with wheelbases less than 100 inches, intermediate utility vehicles as those with wheelbases in the range 100 to 120 inches, and large utility vehicles as those with wheelbases exceeding 120 inches.

The results for vans, pickups, and utility vehicles are presented in relative terms with the value 100 corresponding to the result for *all passenger cars* combined in each claim size category. Thus, the value 73 for the relative overall claim frequency of all 1979-1981 model year vans indicates a claim frequency result that was 27 percent better than the result for all 1979-1981 model year passenger cars.

The total exposure for vans, pickups, and utility vehicles represented in the three model years included in this report amounted to over one million insured vehicle years. Figure 2 displays these results by vehicle group and by size of claim. As a group, large and intermediate utility vehicles and standard pickups had the best injury results, ranging from about one-half to about two-thirds the result for all passenger cars. The small utility vehicles group was the only group with claim frequencies that were higher than the all-passenger-car result for all claim size categories. (The Jeep CJ-5 and CJ-7 models contributed over 97 percent of the exposure to this group of vehicles.) Also noteworthy is that these vehicles had increasingly higher percentages of claims involving higher medical payments, with claim frequencies 65 percent greater than that for passenger cars for claims exceeding $1,000 in medical payments.

Table 5 presents relative injury claim frequency results for all of the 1979 through 1981 model year vans, pickups, and utility vehicles with sufficient exposure. Results are shown for individual series and for each vehicle group. Within each vehicle group, the individual series are listed in ascending sequence of their overall relative claim frequencies.

Table 5 shows that the GMC C2500/K2500 and Chevrolet C20/K20, both standard-sized pickups, the Chevrolet G20 Sportvan, and the Chevrolet C10/K10 Suburban all had overall injury claim frequencies approximately one-half the all-passenger-car result.

The Subaru Brat was the only pickup truck which had an overall claim frequency higher than the overall passenger car result and the Toyota Standard Bed and Toyota Long Bed pickups had higher than average frequencies for claims exceeding $250. Except for the Chevrolet El Camino, the overall claim frequencies for all standard-sized pickup trucks were as low as or lower than those for all of the small pickups. In general, for vans and pickups, the 3/4 ton models had lower claim frequencies than their 1/2 ton counterparts.

In each claim size category reported, the Jeep CJ-5 had by far the highest claim frequency.

FIGURE 2

Personal Injury Protection Coverages
Relative Claim Frequencies
1979-1981 Model Year Vans, Pickups, and Utility Vehicles

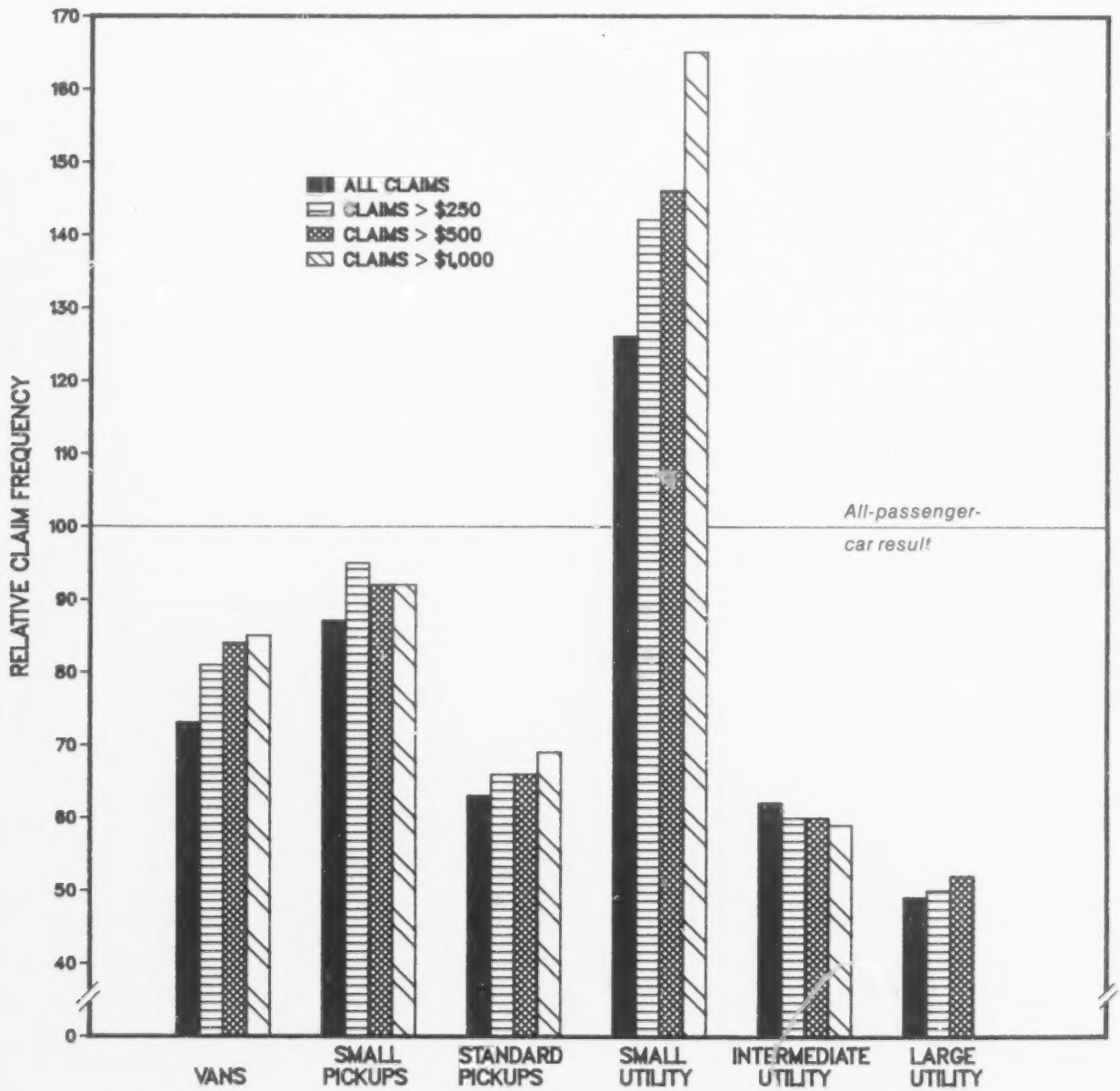


TABLE 5
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGES 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
		VANS					
79-81	ALL VANS		200587	73	81	84	85
79-81	CHEVROLET	G20 SPORTVAN (3/4T)	9488	50			
79-81	GMC	G2500 VANDURA (3/4T)	5447	60			
79-81	DODGE	B250 (3/4T)	34283	63	75	76	79
79-81	FORD	E-150 CLUB WAGON (1/2-3/4T)	8410	68			
79-81	FORD	E-250 ECONOLINE (3/4T)	5141	69			
79-81	CHEVROLET	G20 CHEVYVAN (3/4T)	29574	73	83	89	92
79-81	FORD	E-100 ECONOLINE (1/2T)	9497	77			
79-81	FORD	E-150 ECONOLINE (1/2-3/4T)	37374	81	92	96	106
79-81	DODGE	B150 (1/2T)	15814	81	79	79	
79-81	CHEVROLET	G10 CHEVYVAN (1/2T)	25004	84	93	88	**
		PICKUPS					
79-81	SMALL PICKUPS		199560	87	95	92	92
79-81	DATSUN	STRETCH	27006	76	95	96	98
79-81	CHEVROLET	LUV	33461	79	77	69	60
79-81	FORD	COURIER LONG BED	20070	81	89	86	
79-81	DATSUN	STANDARD BED	17149	88	94	97	
79-81	TOYOTA	LONG BED	33697	89	101	101	107
79-81	DODGE	D-50	16644	89	99	93	
79-81	PLYMOUTH	ARROW	8159	90			
79-81	TOYOTA	STANDARD BED	24388	98	109	105	
79-81	SUBARU	BRAT	10787	119	117		
79-81	STANDARD PICKUPS		600820	63	66	66	69
79-81	GMC	C2500/K2500 (3/4T)	8117	47			
79-81	CHEVROLET	C20/K20 (3/4T)	32218	50	58	57	57
79-81	FORD	F-150 (1/2-3/4T)	140248	61	64	67	68
79-81	FORD	F-250 (3/4T)	42488	61	67	74	82
79-81	GMC	C1500/K1500 (1/2T)	34814	62	69	62	58
79-81	FORD	F-100 (1/2T)	95720	64	68	67	74
79-81	CHEVROLET	C10/K10 (1/2T)	167206	64	68	66	72
79-81	DODGE	D150/W150 (1/2T)	39236	76	79	75	81
79-81	CHEVROLET	EL CAMINO	26041	79	78	79	**

(See footnotes on page 16.)

TABLE 5
RELATIVE CLAIM FREQUENCY BY SIZE OF CLAIM
PERSONAL INJURY PROTECTION COVERAGES 1979-1981 MODELS

MODEL YEARS	MAKE	SERIES	EXPOSURE	SIZE OF CLAIM ALL	>$250	>$500	>$1000
		UTILITY VEHICLES					
79-81	SMALL UTILITY VEHICLES		50529	126	142	146	165
79-81	JEEP	CJ-7	28933	117	127	128	147
79-81	JEEP	CJ-5	20223	141	164	177	
79-81	INTERMEDIATE UTILITY VEHICLES		119343	62	60	60	59
79-81	JEEP	CHEROKEE	19004	54	48	49	
79-81	CHEVROLET	C10/K10 BLAZER (1/2T)	35144	60	61	64	57
79-81	JEEP	WAGONEER	12060	62	71		
79-81	FORD	BRONCO	36631	63	61	61	62
79-81	GMC	C1500/K1500 JIMMY (1/2T)	5179	67			
79-81	DODGE	AD150/AW150 RAMCHARGER	6094	75			
79-81	LARGE UTILITY VEHICLES		18235	49	50	52	
79-81	CHEVROLET	C10/K10 SUBURBAN (1/2T)	11922	51	48		

FOOTNOTES FOR TABLE 5

RESULTS ARE STANDARDIZED TO THE DISTRIBUTION:

YOUTHFUL OPERATOR	NO YOUTHFUL OPERATOR
15%	85%

MINIMUM EXPOSURE REQUIREMENTS FOR REPORTING:

ALL CLAIMS - 5,000 VEHICLE YEARS
CLAIMS > $250 - 10,000 VEHICLE YEARS
CLAIMS > $500 - 15,000 VEHICLE YEARS
CLAIMS >$1000 - 25,000 VEHICLE YEARS

** INSUFFICIENT DATA TO COMPUTE STANDARDIZED RESULT.

Appendix A
Specifications of Injury Coverages

Personal Injury Protection (PIP) Coverages

Personal injury protection coverages provide first-party insurance against medical and other types of losses in "no-fault" states.

The personal injury protection coverages reported in this study were based on data from the 19 states listed below.

Personal Injury Protection (PIP) Coverages
States Included

Colorado	Minnesota
Connecticut	New Jersey
Delaware	New York
Florida	North Dakota
Georgia	Oregon
Hawaii	Pennsylvania
Kansas	South Carolina
Kentucky	Texas
Maryland	Utah
Michigan	

Appendix B
Method of Data Analysis

Personal Injury Protection Coverages

Results in this report are based on "personal injury protection" (PIP) coverages which are provided in so-called no-fault states. These coverages were selected because they provide medical expense reimbursement to injured occupants of the insured vehicle.

Use of PIP insurance data to identify crashes involving injury has certain limitations because these data cannot provide information on all occupant injuries. This occurs when claims for injury costs are not made under PIP coverages because of the availability of other sources of medical expense reimbursements, such as bodily injury liability and/or health insurance coverages. Consequently, PIP claim frequencies do not include all of the crashes involving injury. This limitation should not distort comparisons among different vehicles.

Vehicle Description and Identification

The Vehicle Identification Numbers (VINs) of most new automobiles sold in the United States are individually unique numbers that contain, in coded form, detailed information as to each vehicle's make, model year, series,* and other distinguishing characteristics.

The very specific vehicle types for which results are presented in this report were derived from the VINs of the individual automobiles.

Only data with valid VINs were used for this report. Each VIN was decoded into a set of specific characteristics. For the purposes of this report the vehicle characteristics of primary concern were make, model year, series, body style, and wheelbase.

Exposure

Exposure, in terms of insured vehicle years, was computed for each individual vehicle from the coverage data. The total number of insured vehicle years for each vehicle series was then obtained by accumulating the exposure for all of the individual vehicles of that vehicle series.

For each vehicle series, the exposure was also computed for each operator age group — youthful operators and no youthful operators.*

Claim Frequency

Both pending and paid claims for an individual vehicle were first matched with its corresponding coverage data to ensure that the crash had occurred within an appropriate period of coverage for that vehicle. In every instance in which multiple claims were made for the same crash — e.g., when more than one occupant of the car incurred medical expenses — the claims were treated as a single injury claim in the calculation of claim frequencies. It should be noted that some medical expenses can sometimes be incurred even though the occupants are not injured. This can occur, for example, when precautionary medical examinations are undertaken even though no injuries are apparent or, in fact, found.

All injury claims involving medical expense reimbursements were used, together with the corresponding exposure, to cumpute the claim frequencies in terms of the number of claims per 1,000 insured vehicle years. The overall claim frequency results were computed using both paid and pending claims. In addition to the overall claim

*See Appendix C for definitions.

frequency results, separate claim frequency results were computed for claims in which the medical losses exceeded $250, $500, and $1,000. The latter three results provide indications of the extent to which particular cars are over- or under-involved in crashes resulting in more significant injuries. Claims involving non-medical losses only and claims settled without payments were not used. Thus, the claim frequencies represent the number of crashes per 1,000 insured vehicle years in which one or more injuries occurred resulting in medical expense claim payments under PIP insurance coverages.

Standardization

The losses for different vehicles can vary substantially in relation to certain non-vehicle factors. One important factor with which claim frequency varies is the operator age group; and the mix of operator ages can vary considerably among different vehicle types — so considerably that it could distort comparisons of results between vehicles if not taken into account.

Youthful operators have higher insurance claim frequencies than older drivers. Thus, if two vehicle types have different proportions of youthful operators, this difference, if not taken into consideration, would be sufficient to bias comparisons. To remove this effect for each vehicle type, the results for each vehicle type were weighted, using the values shown below, to produce a weighted average of the actual results for each operator age group. In this way the results for each vehicle type are based on the same mix, or distribution, of exposure for the two operator age groups.

Since the same weights are used for each vehicle type, the effects due to operator age group are present in equal amounts in the standardized results for each vehicle type. Therefore, to the extent that the age distributions within operator age group do not vary substantially for different vehicles, these effects can no longer bias comparisons among vehicles.

This standardization procedure is widely used in vital health statistics.* The basic principle of this standardization procedure is the introduction of a standard distribution of exposure for the different operator age groups.

Operator Age Group Weights

Youthful Operator	No Youthful Operator	Combined
0.15	0.85	1.0

Exposure Threshold For Reporting Results

A threshold of 5,000 insured vehicle years of exposure was selected for reporting the overall claim frequency results for vehicle size classes, subgroups, and individual vehicle series. Consequently, no results are presented in this report for any of the vehicle series with smaller amounts of exposure. In addition, different thresholds were used to determine whether the claim frequency results for medical losses exceeding the specified dollar amounts were published. In order for the claim frequency results for medical losses exceeding $250 to be published, at least 10,000 insured years of exposure were required; for medical losses of greater than $500, the minimum exposure was 15,000, and for medical losses exceeding $1,000, the minimum exposure was 25,000 insured vehicle years.

It should be kept in mind that, in general, the greater the exposure associated with a reported claim frequency, the more confidence can be placed in it.

---

* For example, see Armitage, P., *Statistical Methods in Medical Research*, Wiley, New York, 1971

Combining Results For More Than One Model Year

The relative injury loss experience of particular vehicles does not change substantially from model year to model year providing that the basic design of the vehicle remains essentially unchanged. For this reason and because substantial amounts of exposure are needed to provide reliable injury claim frequency results, the data for model years 1979 through 1981 were combined for those vehicles whose basic designs remained unchanged.

The aggregated model year result (R) for each vehicle series (i) was obtained by weighting the relative claim frequency for each modle year (j) by the applicable exposure for each model year; that is,

$$R_i = \frac{\sum exp_{ij} \frac{f_{ij}}{F_j}}{\sum exp_{ij}} \cdot 100$$

where exp_{ij} = exposure for vehicle i for model year j,

f_{ij} = claim frequency for vehicle i for model year j,

and F_j = claim frequency for all passenger cars for model year j.

Example: Two-Door Honda Accord

	1981	1980	1979
Exposure (exp)	8,988	26,806	48,381
Claim Frequency (f)	20.2	18.7	17.3
Claim Frequency (F) - all cars	19.1	18.3	17.2

$$\text{Result} = \frac{8{,}988\left(\frac{20.2}{19.1}\right) + 26{,}806\left(\frac{18.7}{18.3}\right) + 48{,}381\left(\frac{17.3}{17.2}\right)}{8{,}988 + 26{,}806 + 48{,}381} \cdot 100 = 102$$

Appendix C
Definitions

Claim Frequency — The number of claims for a group of vehicles, divided by the exposure for that group; expressed as claims per one thousand insured vehicle years.

Exposure — The time interval an individual vehicle is insured. Exposure for a group of vehicles is expressed in units of insured vehicle years.

First-Party Coverage — An insurance coverage under which the policyholder collects compensation for his losses from his own insurer regardless of fault.

No-Fault Auto Insurance — An auto insurance plan in which each driver/owner accepts financial responsibility for some or all losses sustained by himself, pedestrians hit by him, and occupants of his own vehicle in return for which he enjoys some immunity from liability for losses to third-party persons.

Operator Age Group — The factor which distinguishes those vehicles whose rated driver is youthful from those vehicles whose rated driver is not youthful (see *Youthful Operator*).

Personal Injury Protection (PIP) Coverage — First-party no-fault coverage in which an insurer pays, within the specified limits, the medical, hospital, and other expenses of the insured, others in his vehicle, and pedestrians struck by him.

Rated Driver — The driver who, for insurance purposes, is considered to represent the greatest loss potential for the insured vehicle.

Vehicle Classifications — There are four vehicle classes, defined as follows:

1. ***Passenger Cars*** — There are four major body style groupings of passenger cars — regular two-door models, regular four-door models, station wagons, and sports or specialty models. Each body style group is further divided into size class subgroups as follows:

   Small Subcompact — Cars with wheelbases less than or equal to 96 inches.

   Subcompact — Cars with wheelbases greater than 96 inches and less than or equal to 101 inches.

   Small Compact — Cars with wheelbases greater than 101 inches and less than or equal to 106 inches.

   Compact — Cars with wheelbases greater than 106 inches and less than or equal to 111 inches.

   Intermediate — Cars with wheelbases greater than 111 inches and less than or equal to 120 inches.

   Full-Size — Cars with wheelbases greater than 120 inches.

2. ***Vans*** — Fully enclosed vehicles with either no hood or a very short hood, in which the engine is placed at least 50 percent behind the windshield. The driver's position is usually well forward, nearly beside the engine, usually within the forward 25% of the wheelbase. These vehicles are designed for cargo transport and are equipped with a right side cargo access door and rear doors. The cargo area is not separated from the passenger area — both are enclosed under the same roof. Some passenger vans are equipped with additional seats in the cargo area and usually have additional side windows also.

3. ***Pickups*** — Cargo-carrying vehicles, usually on a truck chassis, with an enclosed cab and a separate open cargo area. The open cargo area generally is a box with raised sides with an opening tailgate. There are also a small number of auto pickups which are similar to regular pickups except that they are built on a passenger car chassis. Pickups are further divided into two subgroups based on curb weight — small pickups (less than 3,000 pounds) and standard pickups (3,000 pounds or more).

4. ***Utility Vehicles*** — Vehicles built on a heavy-duty chassis capable of off-road use. They are of conventional construction with the driver behind the engine. The cargo and passenger areas are integral with the driver area. Many of these vehicles are equipped with soft or removable tops. Frequently, these vehicles are equipped with four-wheel drive. Utility vehicles are further divided into three subgroups based on wheelbase — small utility vehicles (less than 100 inches), intermediate utility vehicles (from 100 to 120 inches), and large utility vehicles (greater than 120 inches).

Vehicle Identification Number (VIN) — A code, variously comprising both numbers and letters; normally 8 to 17 characters in length, assigned to each vehicle by its manufacturer. The VIN uniquely identifies the vehicle within at least a ten-year time span and, in recent model year vehicles, almost always contains coding which identifies the make, series, model year, and other characteristics of each vehicle.

Vehicle Series — A name denoting a family of vehicles, within a make, with the same wheelbase and a degree of commonality in construction such as body, chassis, etc.

Youthful Operator — For the purposes of this report, all males (married or single) under 25 years of age and all unmarried females under 25 years of age.

Appendix D
Vehicle Series Designations

Part A: Passenger Cars

Make and Model		2-Door Model	4-Door Model	Station Wagon	Sports/ Specialty
American	Concord	C	C	C	
	Eagle**	C	C	C	
	Eagle 50*	S			
	Spirit	SS			
Audi	4000*	S	S		
	5000				SC
BMW	320i*				S
	528i*				SC
Buick	Century/Regal	C	C	C	
	Electra	I	I	I*	
	LeSabre	I	I	I	
	Riviera				I
	Skylark**	SC	SC		
Cadillac	Brougham-2 Dr.** & 4 Dr.				FS
	DeVille-2 Dr. & 4 Dr.				FS
	Eldorado				I
	Fleetwood Limousine				FS
	Seville				I
Chevrolet	Camaro				C
	Caprice	I	I	I	
	Chevette	SS	S		
	Citation**	SC	SC		
	Corvette				S
	Impala	I	I	I	
	Malibu	C	C	C	
	Monte Carlo				C
Chrysler	Cordoba**				I
	Imperial*				I
	Le Baron	C**	I	I	
	Newport		I		
	New Yorker		I		
Datsun	200 SX**	SS			
	210	SS	SS*	SS	
	280 ZX				SS
	280 ZX 2 + 2				S
	310	SS	SS*		
	510	SS*	SS*	SS	
	810		SC	SC*	

(See footnotes on page 26.)

Appendix D
Vehicle Series Designations
(Continued)

Part A: Passenger Cars (Continued)

Make and Model		2-Door Model	4-Door Model	Station Wagon	Sports/ Specialty
Dodge	Aries*	S	S	S	
	Challenger	S			
	Colt	SS			
	Diplomat	C**	I	I	
	Mirada**				I
	Omni	S	S		
	St. Regis		I		
Fiat	Spider 2000				SS
	X 1/9				SS
Ford	Escort*	SS		SS	
	Fairmont	SC	SC	SC	
	Granada*	SC	SC		
	LTD	I	I	I	
	Mustang	S			
	Thunderbird**				C
Honda	Accord	SS	SS		
	Civic	SS	SS*	SS*	
	Prelude				SS
Isuzu	T-Car/I-Mark*	SS	SS		
Jaguar	XJ6*				I
Lincoln	Mark VI**-2 Dr. & 4 Dr.				I
	Town Car**-2 Dr. & 4 Dr.				I
Mazda	626*	S	S		
	GLC	SS*	SS*	SS	
	RX-7				SS
Mercedes Benz	240D*				C
	300D*				C
	300SD*				I
	380SL Coupe*				S
Mercury	Capri	S			
	Cougar*	SC	SC		
	Cougar XR-7**				C
	Lynx*	SS		SS	
	Marquis	I	I	I	
	Zephyr	SC	SC	SC	

(See footnotes on page 26.)

Appendix D
Vehicle Series Designations
(Continued)

Part A: Passenger Cars (Continued)

Make and Model		2-Door Model	4-Door Model	Station Wagon	Sports/ Specialty
Oldsmobile	Custom Cruiser			I	
	Cutlass	C	C	C	
	Delta 88	I	I		
	Ninety-Eight	I	I		
	Omega**	SC	SC		
	Toronado				I
Peugeot	505*		C		
Plymouth	Champ	SS			
	Gran Fury**		I		
	Horizon	S	S		
	Reliant*	S	S	S	
	Sapporo	S			
Pontiac	Bonneville	I	I	I	
	Catalina	I	I	I	
	Firebird				C
	Grand Prix				C
	Le Mans	C	C	C	
	Phoenix**	SC	SC		
	T1000*	SS	S		
Porsche	911 Coupe				SS
	924 Coupe				SS
	928 Coupe				S
Renault	18i*		S	S	
	Le Car*	SS			
Saab	900*	S	S		
Subaru	DL/GL(F)*	S	S	S	
	DL/GL 4WD*			S	
	Standard*	SS			
	Standard 4WD*	SS			
Toyota	Celica	S			
	Celica Supra				SC
	Corolla*	SS	SS	SS	
	Corolla Tercel**	S	S*		
	Corona*		S	S	
	Cressida		SC	SC	
	Starlet*	SS			

(See footnotes on page 26.)

Appendix D
Vehicle Series Designations
(Continued)

Part A: Passenger Cars (Continued)

Make and Model		2-Door Model	4-Door Model	Station Wagon	Sports/ Specialty
Volkswagen	Dasher		S*	S	
	Jetta*	SS	SS		
	Rabbit*	SS	SS		
	Rabbit Convertible**				SS
	Scirocco	SS			
Volvo	240*	SC	SC	SC	
	260*		SC		

SS - Small Subcompact-Wheelbase less than or equal to 96 inches
S - Subcompact-Wheelbase greater than 96 and less than or equal to 101 inches.
SC - Small Compact-Wheelbase greater than 101 and less than or equal to 106 inches.
C - Compact-Wheelbase greater than 106 and less than or equal to 111 inches.
I - Intermediate-Wheelbase greater han 111 and less than or equal to 120 inches.
FS - Full Size-Wheelbase greater than 120 inches.

* - 1981 Models Only
** - 1980 and 1981 Models Only

Models contributing less than 100 insured vehicle years of exposure are not listed.

Appendix D
Vehicle Series Designations
(Continued)

Part B: Vans, Pickups, and Utility Vehicles

Vehicle Class	Make	Series
Vans	Chevrolet	G10 Chevyvan (1/2T) G20 Chevyvan (3/4T) G10 Sportvan (1/2T) G20 Sportvan (3/4T)
	Dodge	B150 (1/2T) B250 (3/4T)
	Ford	E-100 Club Wagon (1/2T) E-150 Club Wagon (1/2-3/4T) E-250 Club Wagon (3/4T) E-100 Econoline (1/2T) E-150 Econoline (1/2-3/4T) E-250 Econoline (3/4T)
	GMC	G1500 Rally Wagon (1/2T) G2500 Rally Wagon (3/4T) G1500 Vandura (1/2T) G2500 Vandura (3/4T)
	Plymouth	PB150 Voyager (1/2T) PB250 Voyager (3/4T)
	Volkswagen	Vanagon**
Pickups	Chevrolet	C10/K10 (1/2T) C20/K20 (3/4T) El Camino Luv Luv Long Bed*
	Datsun	Standard Bed Stretch
	Dodge	D-50 D150/W150 (1/2T) D250/W250 (3/4T)
	Ford	Courier* Courier Long Bed F-100 (1/2T) F-150 (1/2-3/4T) F-250 (3/4T)
	GMC	Caballero C1500/K1500 (1/2T) C2500/K2500 (3/4T)
Pickups (cont'd)	Isuzu	Long Bed* Standard Bed*
	Jeep/AMC	J10 (1/2 T) J20 (1/2-3/4T) Scrambler*
	Mazda	Long Bed Standard Bed
	Plymouth	Arrow
	Subaru	Brat E-250 Econoline (3/4T)
	Toyota	Long Bed Standard Bed
	Volkswagen	Rabbit*
Utility Vehicles	Chevrolet	C10/K10 Blazer (1/2T) C10/K10 Suburban (1/2T) C20/K20 Suburban (3/4T)
	Dodge	AD150/AW150 Ramcharger
	Ford	Bronco
	GMC	C1500/K1500 Jimmy (1/2T) C1500/K1500 Suburban (1/2T) C2500/K2500 Suburban (3/4T)
	Jeep AMC	Cherokee CJ-5 CJ-7 Wagoneer
	Plymouth	PD150/PW150 Trailduster
	Toyota	Land Cruiser Land Cruiser S/W*

* 1981 Models Only
** 1980 and 1981 Models Only

List of Publications

Research reports published by the Highway Loss Data Institute are:

R72-1 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1972 Models*, June 1973.

R73-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1973 Models Compared with 1972 Models*, September 1973.

R73-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1973 Models*, March 1974.

R73-3 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1973 Models During Their First Two years*, December 1974.

R73-4 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1973 Models During Their First Three Years*, December 1975.

R74-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1974 Models*, May 1974.

R74-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1974 Models During Their First Year*, December 1974.

R74-3 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1974 Models During Their First Two Years*, December 1975.

R75-1 *Automobile Insurance Losses, Collision Coverages, Initial Results for 1975 Models*, July 1975.

R75-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1975 Models During Their First Year*, December 1975.

R76-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1976 Models*, June 1976.

R76-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1976 Models During Their First Year, 1975 Models During Their First Two Years, 1974 Models During Their First Three Years*, December 1976.

R77-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1977 Models*, June 1977.

R77-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1977 Models During Their First Year, 1976 Models During Their First Two Years, 1975 Models During Their First Three Years*, December 1977.

R78-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1978 Models*, June 1978.

R78-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1978 Models During Their First Year, 1977 Models During Their First Two Years, 1976 Models During Their First Three Years*, January 1979.

R79-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1979 Models*, June 1979.

R79-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1979 Models During Their First Year, 1978 Models During Their First Two Years, 1977 Models During Their First Three Years*, December 1979.

R80-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1980 Models*, June 1980.

R80-2 *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1980 Models During Their First Year, 1979 Models During Their First Two Years, 1978 Models During Their First Three Years*, December 1980.

R81-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1981 Models*, July 1981.

R81-2 *Insurance Losses, Collision Coverages; Passenger Cars, Vans, Pickups, and Utility Vehicles; 1981 Models During Their First Year, 1980 Models During Their First Two Years, 1979 Models During Their First Three Years*, December 1981.

R82-1 *Automobile Insurance Losses, Collision Coverages; Initial Results for 1982 Models*, July 1982.

V78-1 *Automobile Insurance Losses, Non-Commercial Collision Coverages; Variations by Make and Series, Vans, Pickups and Utility Vehicles; 1978 Models During Their First Year, 1977 Models During Their First Two Years*, February 1979.

V79-1 *Automobile Insurance Losses, Non-Commercial Collisions Coverages; Variations by Make and Series, Vans, Pickups and Utility Vehicles; 1979 Models During Their First Year, 1978 Models During Their First Two years*, April 1980.

V79-2 *Automobile Insurance Losses, Personal Injury Protection Coverages; Claim Frequency Results by Size of Claim for 1977, 1978, and 1979 Vans, Pickup Trucks, and Utility Vehicles*, October 1980.

V79-3 *Insurance Theft Losses; Vans, Pickups, and Utility Vehicles, 1979 Models*, May 1981.

V80-1 *Automobile Insurance Losses, Non-Commercial Collision Coverages; Variations by Make and Series, Vans, Pickups, and Utility Vehicles; 1980 Models During Their First Year, 1979 Models During Their First Two Years, 1978 Models During Their First Three Years,* December 1980.

V80-2 *Automobile Insurance Losses, Personal Injury Protection Coverages; Injury Claim Frequency Results by Size of Claim; Vans, Pickup Trucks, and Utility Vehicles, 1977-1980 Models,* September 1981.

I75-1 *Automobile Insurance Losses, Injury Coverages; Claim Frequency Results for 1974 and 1975 Models,* June 1976.

I75-2 *Automobile Insurance Losses, Percentage of Collision Claims with Associated Injury Claims for 1974 and 1975 Models,* March 1977.

I76-1 *Automobile Insurance Losses, Injury Coverages; Claim Frequency Results for 1974, 1975, and 1976 Models,* November 1977.

I76-2 *Automobile Insurance Losses, Injury Coverages; Claim Frequency Results for 1974, 1975, and 1976 Models,* September 1978.

I77-1 *Automobile Insurance Losses, Injury Coverages; Claim Frequency Results for 1977 Models,* September 1978.

I78-1 *Automobile Insurance Losses, Personal Injury Protection Coverages; Claim Frequency Results for 1977 and 1978 Models,* September 1979.

I79-1 *Automobile Insurance Losses, Personal Injury Protection Coverages; Claim Frequency Results by Size of Claim for 1977, 1978, and 1979 Models,* October 1980.

I80-1 *Automobile Insurance Losses, Personal Injury Protection Coverages; Claim Frequency Results by Size of Claim; 1978-1980 Models,* September 1981.

I81-1 *Insurance Losses, Personal Injury Protection Coverages; Passenger Cars, Vans, Pickups, and Utility Vehicles,* September 1982.

A-1 *Automobile Insurance Losses, Collision Coverages; A Comparison of Results for 1972 and 1973 Models,* May 1974.

A-2 *Automobile Insurance Losses, Collision Coverages; Relationships Between Losses and Vehicle Density, 1972 and 1973 Models,* September 1974.

A-3 *Automobile Insurance Losses, Collision Coverages; A Comparison of Results for 1973, 1974 and 1975 Models,* July 1975.

A-4 *Automobile Insurance Losses, Collision Coverages; Relationships Between Losses and Vehicle Density, 1974 and 1975 Models,* December 1975.

A-5 *Automobile Insurance Losses, Collision Coverages; Relationships Between Losses and Vehicle Body Style, 1974 and 1975 Models,* December 1975.

A-6 *Automobile Insurance Losses, Collision Coverages; An Investigation of Relationships Between Losses and Engine Specifications, Using 1973 Models,* June 1976.

A-7 *Automobile Insurance Losses, Collision Coverages; Annual Increases and Seasonal Variations 1972, 1973, 1974 and 1975 Models,* June 1976.

A-8 *Automobile Insurance Losses, Injury Coverages; A Preliminary Comparison of Results for Volkswagen Rabbits with Passive and Active Seat Belts, 1975 and 1976 Models,* June 1977.

A-9 *Automobile Insurance Losses, Collision Coverages; A Comparison of Collision Claim Size Distributions for 1974, 1975, and 1976 Models,* November 1977.

A-10 *Automobile Insurance Losses, Injury Coverages; Comparisons of Claim Frequencies of Volkswagen Rabbits with Automatic and Manual Seat Belts, 1975, 1976, and 1977 Models,* June 1979.

A-11 *Automobile Insurance Losses, Collision Coverages; The Consistency of the Loss Experience of Specific Vehicles Produced in Several Years, 1975 to 1978 Models,* June 1979.

A-12 *Automobile Insurance Losses, Collision Coverages; An Assessment of the Effects of the Federal Safety Bumper Standard on the Losses for 1972 Through 1978 Models,* June 1980.

A-13 *Automobile Insurance Losses, Personal Injury Protection and Collision Coverages; The Effects of Car Size on Crash Losses, 1977-1980 Models,* May 1981.

A-14 *Automobile Insurance Losses, Personal Injury Protection and Collision Coverages; Comparisons of the Loss Experience of Two- and Four-Door Cars, 1978, 1979, and 1980 Models,* June 1981.

A-15 *Automobile Insurance Losses, Personal Injury Protection and Collision Coverages; Relationships Between Injury and Collision Losses and Engine Options for Selected 1977-1979 Compact Cars,* June 1981.

A-16 *Automobile Insurance Losses, Collision Coverages; The Frequency of Claims Involving Salvage; Subcompact and Compact Cars; 1980 Models,* January 1982.

A-17 *Insurance Losses, Comprehensive Coverages; Non-Crash Fire Losses; 1979-1980 Models,* February 1982.

A-18 *Insurance Losses, Theft Coverages; The Distribution of Theft Loss Payment Amounts; Passenger Cars, Vans Pickups, and Utility Vehicles; 1981 Models During Their First Year, 1980 Models During Their First Two Years; 1979 Models During Their First Three Years,* June 1982.

T79-1 *Automobile Insurance Theft Losses by Make and Series; 1979 Models*, June 1980.

T80-1 *Automobile Insurance Theft Losses by Make and Series; 1979 and 1980 Models*, April 1981.

T81-1 *Insurance Losses, Theft Coverages; Passenger Cars, Vans, Pickups, and Utility Vehicles; 1981 Models During Their First Year, 1980 Models During Their First Two Years, 1979 Models During Their First Three Years*, May 1982.